Fall Series on Industrial Policy:  
*Procurement as an Instrument of Policy: Novel Approaches to Climate Challenges*

Our roundtable of climate and procurement experts discussed the underutilized role of the federal government as a strategic buyer to overcome market failures in scaling innovative solutions to climate change. Speakers included:

- **Andrew Mayock**, Federal Chief Sustainability Officer at the White House Council on Environmental Quality (CEQ).
- **Thomas Kalil**, Chief Innovation Officer at Schmidt Futures
- **Dr. Lara Pierpoint**, Director of Climate, Actuate
- **Jetta Wong**, Day One Project Policy Entrepreneur in Residence and Senior Fellow, Information Technology and Innovation Foundation (ITIF)

This document contains a summary of the event:

- **Initial Perspectives**: Our panelists individually shared their brief perspectives on issues related to innovative procurement mechanisms, ongoing administration priorities and actions to address climate challenges, and the role of the private sector to engage with novel procurement levers.

- **Q&A Panel Discussion**: Moderated by Jetta Wong, our panelists responded to a series of questions including several posed by the audience.

- **Follow-up Opportunities**: If any of these ideas resonated with you, we encourage you to follow-up with us by reading our *Procurement Primer*, our *Industrial Policy memo*, and submit your ideas with us *here*.
Initial Perspectives

The session began with remarks from Thomas Kalil (Schmidt Futures), who provided an introduction into procurement levers, or “demand-pull” mechanisms.

- **Economists distinguish between push and pull approaches to innovation.** The former is an important, traditional feature of government efforts to promote R&D, such as tax credits or grants to a university researcher or firm that covers costs of a project. The latter involves innovative ways to leverage the role of government as a buyer.

- For example, the Falcon 9 rocket, a partnership between the National Aeronautics and Space Administration (NASA) and SpaceX, gave the United States an important capability to send rockets to the International Space Station without being dependent on Russia. The NASA-SpaceX contract used payments that were contingent on meeting key milestones, or “milestone-based payments.” NASA got access to this capability at a fraction of the cost as a "business as usual" approach, such as cost-plus contracts.

- Another example was Operation Warp Speed, which applied Nobel laureate Michael Kremer’s solution of “advanced market commitments” — a guarantee to purchase a given volume of a product that doesn’t exist yet — to the market failure of vaccine development.

- Government should utilize financial contingencies based on success, not failure, by identifying where market failures exist and defining metrics of success and the reward (e.g., prize, purchase order, milestone payment, etc.) This would be a powerful new arrow in our quiver to solve the climate crisis. Ideally, demand-pull mechanisms would create a marketplace for outcomes: someone establishes a goal, industry teams compete to meet this goal, investors bet on these teams, and we see who is successful at reaching finish line.

The session then shifted to a discussion from Andrew Mayock (CEQ) about the Biden administration’s key priorities in combatting climate change, along with nascent conversations on procurement.

- **The federal government is back in action in the procurement area.** From Day One of the administration with Executive Order 14008, the President called on
agencies to use our buying power to tackle the climate crisis. The power of the executive order and its impact on movement throughout the federal government is noteworthy. It has helped increase transparency and standards, especially with respect to transitioning the full federal fleet of vehicles to zero emissions.

- On October 7th, the administration released a series of agency climate adaptation and resilience plans to deliver on the President’s Day One goals. The White House Council on Environmental Quality played a key role in defining standards and implementing quality reports.

- More recently, the administration’s Federal Acquisition Regulatory Council has been meeting to improve the rules of the game when it comes to procurement. They released the Federal Acquisition Regulation: Minimizing the Risk of Climate Change in Federal Acquisitions for public comment and would welcome your feedback on this.

- Finally, we plan on releasing a detailed framework for a federal sustainability plan, that will include government footprints over buildings, vehicles, and goods & services and how to move the needle on carbon reduction.

The last individual speaker was Dr. Lara Pierpoint (Actuate), who discussed her experiences with the private sector in scaling climate innovation solutions.

- **We operate under the assumption** that if we have the right innovation and policy formula, climate technology will commercialize at scale. This isn’t necessarily wrong, but it will simply take too long. Consider solar energy, which was first developed at Bell Labs and took three decades to arrive at a viable place. Even now, after a series of policies and several more decades, just over two percent of U.S. energy is from solar. We simply do not have this kind of time for each technology.

- We’re getting there, but we need to understand more about how demand-pull mechanisms work and how they can be applied towards key sectors and challenges. For example, it is very expensive to produce carbon-free cement. Mass timber is one way to reduce embodied carbon in buildings, but timber happens to be even more expensive as there isn’t a large supply of materials available domestically. **The real problem is that U.S. companies are not convinced the demand for carbon-free cement is there, so they don’t invest.**
Clean hydrogen and grid storage technologies are other examples where demand-pull mechanisms could be applied to incentivize innovation and reach climate goals.

**Q&A Panel Discussion**

Day One Project Policy Entrepreneur in Residence Jetta Wong (ITIF) moderated the panelist Q&A session, asking the following questions with summarized responses:

*If we all agree that demand-pull mechanisms could have an outsized impact on driving climate solutions, what are some of the barriers preventing the widespread adoption of these tools?*

**Thomas Kalil:**

One problem is that we have a shortage of people that know how to design effective demand-pull mechanisms. Then there's the lack of cultural awareness within agencies over useful examples like Falcon 9 for accomplishing strategic objectives. This has resulted in an underutilization of Other Transactions Agreements — perhaps the broadest laws passed by Congress as it is defined by what it is not (not a grant, not a contract) rather than what it is. Under the America COMPETES Reauthorization Act of 2010, federal agencies can support incentive prizes of up to $50 million, but few agencies are using these authorities for ambitious prizes. Finally, appropriations processes pose another obstacle, as Congress traditionally requires that agencies spend their annual appropriations in two years. But for architecting successful demand-pull mechanisms, agencies may need to disperse these funds over a longer time period. It's important that Congress consider utilizing “No-year” funding for agency R&D and market-shaping efforts. The private sector has an equally important role. Consider the automotive industry: research by the Boston Consulting Group indicates that if an automobile was made with carbon neutral materials, it would only increase the sticker price by 2%. The federal government has not realized the potential to shift markets in this direction.

**Jetta Wong:**

During the Obama administration, only one person in the entire agency knew about prizes and challenges; it was her job to teach others. Now the Department of Energy has many people working on these issues, but a lot more opportunities to execute on. We need more people willing to leverage these procurement innovations.
Andrew Mayock:
People, policy, and resources matter most. The CEQ and Administration appreciates that many good civil servants with this know-how have left. **We have a people deficit; we need more individuals who possess the right skills to effect the transformation we're hoping for.** In terms of policy, the federal sustainability plan we hope to release soon comments on these issues, and sends a clear signal to markets with goals of carbon-free electricity and emission-free federal vehicles. Finally, on resources, now is an opportune time in Washington with the Build Back Better agenda. It has the ability to turbocharge the federal procurement space into truly solving climate challenges.

Lara Pierpoint:
We also have a structural problem with how the federal government is set up. The Department of Energy is focused on sources of energy, not climate, which has caused an organizational and resource challenge in meeting their climate objectives. The climate challenge is a different problem and requires new experiences. In the previous administration, the Department of Energy actually took a step forward. They had robust conversations with industry players and took a systemic view to thinking about how to unlock new technology pathways. It’s important to acknowledge where industry is coming from, what barriers are in their way, and how we might unlock more pathways for scaling innovations.

**Despite these barriers, we know a few agencies have started deploying these tools. How should agencies think about getting this right?**

Thomas Kalil:
When it comes to the Other Transaction Authorities, agencies have a large amount of flexibility in terms of how to use it. **The authority is there, but agencies either haven't used it or aren't using it creatively enough.** The goal of these partnerships, in the climate context, needs to be on accelerating the scale of deployment and eliminating the “green premium.” Climate solutions need to be scaled and profitable. The government should be partnering with the consumers of new technologies, not just the producers.
Andrew Mayock:
The “Buy Clean” policy is a critical tool towards making progress on these fronts and agencies should recognize the high-level strategic support for these procurement solutions. We should think more about how to scale up and work with the private sector.

One of the solutions mentioned was for Congress to utilize no-year funding, is there a concern with transparency over this and other demand-pull mechanisms?

Thomas Kalil:
If anything, demand-pull mechanisms require more transparency as the government must get specific about what it wants and when. The sponsor of the prize sets a very clear goal, and the results usually follow from this. Performance-based goals versus “we know it when we see it” is a useful mode of operation. The no-year funding element is important for addressing the appropriations obstacle, so agencies have available pools of funding to disperse at later stages.

Lara Pierpoint:
Milestone-based approaches are a great way to achieve progress with transparency, especially with complex technologies like nuclear power. If you want to get the innovation you need, it’s important to have clarity on regulatory milestones in addition to procurement and other targets. Milestone-based payments offer this support.

If you could challenge the audience to do one thing related to tackling the climate crisis with procurement, what would it be?

Thomas Kalil:
Find technologies that have potential for impact and describe the challenges and opportunities to applying demand-pull mechanisms in those sectors. Get specific. You can read about the different levers on the Day One Project website.

Lara Pierpoint:
For those in the agencies, and outside of government, embrace a broader problem-solving mindset. It’s too easy to fall into climate tech silos. Let’s think about what the end-point is and what tools can help us get there. This will involve an interdisciplinary collaboration across offices and fields, so let’s be open to it.
Andrew Mayock:
We need resources, and if we get them, we'll figure out the people and policy. Stay tuned for the federal sustainability plan and send us your thoughts!

Follow-up Opportunities

The Day One Project is committed to sourcing diverse ideas from a wide community. We encourage you to stay engaged with us as we cultivate more science and technology policy ideas to set the agenda on industrial policy and beyond.

If these ideas or the proposals on our website resonate with you, we encourage you to follow-up in the following three ways:

- Read our Procurement Primer and our Industrial Policy memo to get a sense of the types of ideas we develop and submit your ideas with us here.
- Stay tuned with our next Industrial Policy event on strategic & regional R&D.
- To receive updates on the work for the Office of the Federal Chief Sustainability officer, visit https://lp.constantcontactpages.com/su/Qds6wfz/CSOsignup